

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number  
**WO 2005/016882 A1**

(51) International Patent Classification<sup>7</sup>: **C07D 209/86**,  
C08F 26/12

(21) International Application Number:  
PCT/CA2004/001509

(22) International Filing Date: 16 August 2004 (16.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/495,113 15 August 2003 (15.08.2003) US

(71) Applicant (for all designated States except US): **UNIVERSITE LAVAL** [CA/CA]; Pavillon des Sciences de l'Éducation, local 1374, Quebec, Quebec G1K 7P4 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LECLERC, Mario** [CA/CA]; 145 Gérard-Morisset, App. 103, Quebec, Quebec G1S 4V5 (CA). **MORIN, Jean-François** [CA/CA]; 861 Rue Baugis, Beauport, Quebec G1C 5Z1 (CA).

(74) Agents: **DUBUC, J. et al.**; Goudreau Gare Dubuc, Stock Exchange Tower, 800 Place Victoria, Suite 3400, P.O. Box 242, Montreal, Quebec H4Z 1E9 (CA).

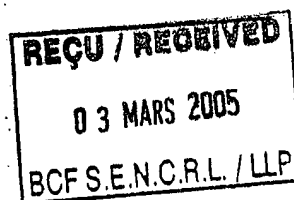
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



(54) Title: **MONOMERS, OLIGOMERS AND POLYMERS OF 2-FUNCTIONALIZED AND 2,7-DIFUNCTIONALIZED CARBAZOLES**



(I)

(57) Abstract: The present invention relates to 2-functionalized and 2,7-difunctionalized carbazoles and 2,7-carbazolenevinylene oligomers and polymers. More specifically, the present invention relates to a compound of Formula (I): wherein R<sup>1</sup> is selected from the group consisting of H, alkyl, and aryl; and wherein R<sup>2</sup> and R<sup>3</sup> are independently selected from the group consisting of H, alkyl, formyl, hydroxymethyl, trityloxymethyl, acetonitrile, chloromethyl, methylphosphonate, methyltriphenylphosphonium and vinyl.

The oligomers and polymers are used in field-effect transistors, light-emitting devices such as light-emitting diodes, and solar cells.

WO 2005/016882 A1